



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,575	12/18/2000	David Emil Nelson	DP-302767	6328

7590 06/18/2003

VINCENT A. CICHOSZ
DELPHI TECHNOLOGIES, INC.
Legal Staff
P.O. Box 5052, Mail Code: 480-414-420
Troy, MI 48007-5052

EXAMINER

MAYEKAR, KISHOR

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/740,575

Applicant(s)
D. NELSON

Examiner
Kishor Mayekar

Art Unit
1753



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Mar 27, 2003
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-66 is/are pending in the application.
- 4a) Of the above, claim(s) 59-66 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 34-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

Art Unit: 1753

DETAILED ACTION

Election/Restriction

1. Applicant's election of invention of Group I, claims 34-58 in Paper No. 9 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the non-thermal plasma reactor element with a mixed type of dielectric barrier structural carrier must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Art Unit: 1753

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 40, 42, 47 and 48 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a non-thermal plasma reactor element having a same type of dielectric barrier structural carriers (such as both null dielectric structural carrier element with both null dielectric barrier structural carrier as shown in Fig. 6), does not reasonably provide enablement for a non-thermal plasma reactor with a mixed type of dielectric barrier structural carriers. The

Art Unit: 1753

specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 35-48 and 51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 35-48 and 51, the combination of another structural carrier with a non-thermal plasma reactor element is confusing because the combination is not longer an element, an essential of a composite entity (emphasis added).

Regarding claim 57, the phrase "said first high k barrier" is lacking antecedent basis.

Art Unit: 1753

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 34-37, 49, 52 and 53 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by SUZUKI et al. (5,417,936) in light of HAMMER et al. (6,119,455). See Fig. 1 or prior art Fig. 5, and Fig.3. HAMMER discloses in col. 2,

Art Unit: 1753

lines 50-52 that non-thermal discharges can be silent discharges and corona discharges.

10. Claims 54 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over SUZUKI '936 in light of HAMMER '455 further in view of IWANAGA (5,411,713). The difference between the reference applied above and the instant claims is the material of the structural carrier. IWANAGA shows in ozone generator that the cooling plates 11 and 12 are made from an aluminum coated alumina (col. 3, lines 36-44). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time was made to have modified the reference's teachings as suggested by IWANAGA because the selection of any of known equivalent materials for the cooling plates would be within the skill of ordinary in the art.

11. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over SUZUKI '936 in light of HAMMER '455. The difference between the reference and

Art Unit: 1753

the instant claim is the use a barrier layer containing a material having less than about 5% porosity. Since the reference discloses the use of quartz as the material for the barrier layer, though the reference is silent on the porosity of the quartz material, the reference's quartz material appears to lead one of ordinary skill in the art towards the recited range of porosity, in absence of evidence to the contrary.

12. Claims 57 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over SUZUKI '936 in light of HAMMER '455 further in view of RAU et al. (6,106,788). The difference between the reference applied above and the instant claims are the material of the barrier layer. RAU shows in a corona discharge device that the use of a barrier containing a doped material ceramic or ceramic materials is known (col. 1, lines 36-42). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time was made to have modified the reference's teachings as suggested by RAU because the selection of any of known equivalent materials for the barrier layer would be within the skill of ordinary in the art.

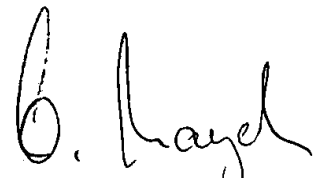
Art Unit: 1753

13. Claims 34, 49 and 50 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by PENNING (2,744,865). See Figs. 1, 3 and 5.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (703) 308-0477. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached on (703) 308-3322. The fax phone number for this Group is (703) 872-9310 (non-after finals) or 872-9311 (after final).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.



Kishor Mayekar
Primary Examiner
Group 1700

KM

June 14, 2003